



PSLV C5 - IRS P6 MISSION



INDIAN SPACE RESEARCH ORGANISATION

C5 launch preparation

- Launch campaign commenced on 30th July '03



Core Base Shroud + Nozzle End Segment

First Stage

Interstage IS 1/2L

Second Stage

Third Stage



Fourth Stage

IRS-P6 Solar Panel Deployed

IRS-P6 Stacked on vehicle

Heat Shield

operational flights

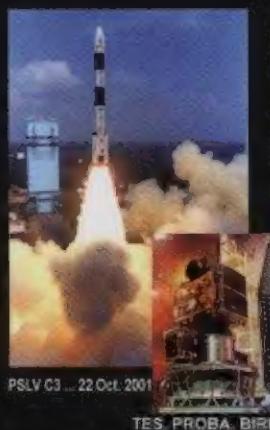


PSLV C1 ... 29 Sept. 1997



PSLV C2 ... 26 May 1998

IRS-P4, KITSAT, TUBSAT



PSLV C3 ... 22 Oct. 2001

TES, PROBA, BIRD



PSLV C4 ... 12 Sept. 2002

METSAT

the space craft

IRS-P6 spacecraft would be the continuity provider for IRS-1C/1D with enhanced capabilities. The Spacecraft has improved payloads compared to those of IRS-1C/1D and has a mass of 1360 kg.



► The high resolution three band Multispectral camera (LISS-4) with a resolution of 5.8 meters with additional off nadir viewing capability.



► The LISS - III camera operating in 4 spectral bands - 3 bands are identical to IRS-1C/1D and a fourth band is in short wave IR with improved resolution.



► The Advanced Wide Field Sensor (AWiFS) operating in 4 bands namely bands 2,3,4 & 5; split as two modules - AWiFs-A & AWiFs-B

the vehicle

The C5 vehicle configuration essentially remains unchanged from PSLV C4 mission. The vehicle is powered by solid propellant first and third stages and liquid propellant second and fourth stages.

- Overall length : 44.4 m
- Lift-off mass : 295.93 t
- First stage : PS1 (S139) + 6 PSOMs HTPB Based Solid
- Second stage : PS2 (PL40) Liquid UH25 + N₂O₄
- Third stage : HPS3 HTPB Based Solid
- Fourth stage : PS4 (PL2.5) Liquid MMH + MON

new element

- CFRP PS3 Adaptor : third stage inert mass reduced by 24 kg



changes

- High Pressure engine for second Stage with UH25 / N₂O₄ Propellant combination
- Modified PS1 RCT Structure and Propellant tank
- Use of E² PROM in Guidance Control Processor and ECIL rate gyros for Rate Gyro Package
- Redundancy in Automatic Launch Sequence (ALS) monitoring parameters

the mission

PSLV C5 - the fifth flight in the operational series and eighth flight of the POLAR SATELLITE LAUNCH VEHICLE is identified as a SSPO mission to deploy the satellite RESOURCESAT - 1 (IRS - P6) in 822 km circular orbit.



MISSION DEFINITION

Orbit	- Sun Synchronous Polar Orbit (SSPO)
Altitude	- 822 km circular
Inclination	- 98.728 deg.
Orbital Period	- 101.35 minutes
Launch time	- 10:22:08 IST -0 / + 10 min
Launch Azimuth	- 140 deg.



STAGE REORIENTATION BY 40° : T6 + 47 s TO 107 s

PS4 CUT-OFF : T6

IRS-P6 SEPARATION : T6 + 37 s

Resourcesat Separation : 1004.00 s 827.032 km 7.840 km/s

Cut-off of PS4 : 826.388 km 7.840 km/s

Ignition of PS4 : 396.24 s 626.557 km 9.748 km/s

Separation of HPS3 : 522.85 s 591.593 km 5.858 km/s

Ignition of HPS3 : 266.93 s 246.531 km 4.189 km/s

Separation of PS2 : 265.73 s 244.864 km 4.183 km/s

Separation of Heatshield : 157.01 s 115.706 km 2.316 km/s

Ignition of PS2 : 113.21 s 67.578 km 1.990 km/s

Separation of PS1 : 113.01 s 67.353 km 1.991 km/s

Separation of 2 ground-lit PSOMs : 90.0 s 41.844 km 1.609 km/s

Separation of 4 ground-lit PSOMs : 68.0 s 23.230 km 1.156 km/s

Ignition of 2 air-lit PSOMs : 25.0 s 2.348 km 0.543 km/s

Ignition of PS1 : 0 s 0.02 km 0.452 km/s

Ignition of 4 ground-lit PSOMs : 1.20 s 0.02 km 0.452 km/s

■ Event

■ Time

■ Altitude

■ Velocity

